

Tribal Update on MPCA's Progress on the Wild Rice Standard, Beneficial Use, and Permitting Approach

Thursday, March 26, 2015
Hinckley Convention Center
11-12:30 p.m.

Tribal Attendees: Nancy Schuldt, Wayne DuPuis, Thomas Howes, Fond du Lac; Darren Vogt, Tyler Kaspar, 1854 Treaty Authority; Perry Bunting, , Chad Weiss, Ryan Rupp, Mille Lacs; Margaret Watkins, Grand Portage; , Mike Connor, Bois Forte; Shane Bowe, Red Lake.

Others: Esteban Chiriboga, John Coleman, GLIFWIC; Chris Wagener, Tom Poleck, Dave Pfeifer, Kathy Mayo, Linda Holst, Ella Mulford, Barbara Wester, Matt Gluckman, Paul Proto, Krista McKim, Rob Pepin, Janet Pellegrini, Peter Swenson, Pat Kuefler, EPA; Shannon Lotthammer, Katrina Kessler, David Thornton, Ed Swain, Gerald Blaha, Phil Monson, Pat Engelking, MPCA

Opening Comments

Shannon Lotthammer opened the meeting. She noted that the MPCA had intended to hold this meeting with Tribes in advance of the announcement of the MPCA draft proposal for wild rice. She noted that the agency felt it had to release the draft proposal early after comments about the current standard and allusions to the draft proposal were in Tuesday's news. She also said the MPCA would be using the handout: *Protecting wild rice from too much sulfate* to briefly outline the MPCA's draft proposal and then would take questions and have discussions. She then asked if any of those at the meeting would like to make any opening comments before beginning the overview.

Nancy Schuldt asked if Shannon could share from the agency's perspective why the agency felt it had to release the draft proposal in advance of the planned release on Thursday, March 26. Shannon Lotthammer noted that the Governor had done an interview with Minnesota Public Radio, which aired on Tuesday March 24 and that the headline implied that the Governor was siding with industry on the wild rice sulfate standard. At that point, the MPCA felt that a more constructive dialogue could be had about the proposed approach to protecting wild rice from excess sulfate if the proposal was released sooner than had been planned, so decided to release the proposal on Tuesday. Nancy then asked if the MPCA knew how well the Governor understood the issues and if he would be supportive of the agency's following up on its responsibilities regarding wild rice. Shannon Lotthammer noted that although she could not speak for the Governor he had been briefed on the draft proposal and that he has said repeatedly that the MPCA should follow the science and that he was very supportive of the scientific approach and clean water.

Shannon also noted that this meeting with Tribal technical experts was the agency's first meaningful conversation on the draft proposal and the first opportunity to discuss details and ask questions about it. She also noted that this will not be the only time the agency will be discussing this and asked those present to let us know the best way to get input and feedback from Tribal governments. She noted that the MPCA will also be meeting with others including the wild rice advisory committee in April and will also be working on developing a technical support document and Statement of Need and Reasonableness to support rulemaking that will start in late summer or early fall.

Margaret Watkins commented that that Tribal governments are not stakeholders and that she felt the agency should not have released the information to the advisory committee prior to meeting with Tribes.

Overview of draft proposal

Katrina Kessler then gave a brief overview of the agency's proposal using the attached graphic. She noted that the studies showed that sulfide is the form of sulfur that is toxic to wild rice and that the agency relied on the field survey data to identify a level of sulfide that would be protective of wild rice. She also noted that the ratio of total organic carbon to iron in the sediment is important to understanding the extent to which sulfate is converted to sulfide. The organic carbon serves as a food source for the bacteria that convert sulfate to sulfide and iron can bind with sulfide so that it is no longer available. Katrina noted the agency used Structural Equation Modeling (SEM), a statistical technique recommended by the peer reviewers, to develop an equation that explains the sulfate, sulfide, iron and organic carbon

interactions and can be used to determine a protective level of sulfate based on the protective sulfide level (proposed to be 0.165 mg/L) and the iron and organic carbon measured in the sediment of a particular wild rice water.

Discussion: Nancy Schuldt asked about the map of study sites that was included in the draft proposal. She noted that there were some dots in northeastern Minnesota that had protective values of sulfate of greater than 200 mg/liter and asked which water bodies they were. Ed Swain commented that they were likely to be stream sites as the organic carbon is more likely to be lower because it is washed away during high flow events. Margaret Watkins asked for a copy of the water body names and locations of sites on the map and also asked if these were natural concentrations of iron and organic carbon. Katrina said the MPCA would share the spreadsheet showing the water body names and location and the data and calculations that went into developing the map on page 3 of the draft proposal. Ed commented that the concentrations of sediment iron and sediment organic carbon were observed values. He noted that the surface water is not particularly elevated in iron.

Darren Vogt from 1854 Authority asked if we knew that the iron sulfide precipitate did not affect wild rice. Ed answered that sulfide and iron form a very strong bond under anaerobic conditions and that we know from the literature that when sulfide interacts with metals the sulfide and metals are less toxic. Under aerobic conditions this could change, and that is one reason the MPCA is not proposing to regulate paddies. Margaret Watkins asked if MPCA is aware of Dr. John Pastor's recent research about the effect of iron oxides coating wild rice roots and possibly limiting nutrient uptake. Shannon noted that MPCA has not received those results, but will consider all new information that becomes available while the Technical Support Document and SONAR are being developed and even into the rulemaking, and refine the proposal as needed based on new information. Shannon emphasized that the proposal is still very much a draft and one of the goals in sharing the draft proposal is to see if additional information is available that the MPCA should be looking reviewing and considering.

Someone on the phone asked if it was necessary to do this complicated exercise based on the suggestion of one peer reviewer and wouldn't it be better to just stick with 10 mg/liter sulfate. Katrina answered that we had pushed hard to see if it was possible to develop a single protective number as the equation makes our permitting and assessment efforts more challenging, but the science shows that in some cases 10 is not protective enough, and in other cases it is overprotective. She also noted that water quality standards have become more complicated in general.

Tom Howes from Fond du Lac asked how long the protective effect of iron lasts, and asked if the iron could be used up?

Ed answered that the model is based on the empirically observed relationship between sulfate and sulfide as a function of iron and carbon at sites, with the assumption that each site is in a steady state. So, predicting the effect of an increase in sulfate at a given site is effectively performed by asking other sites with the higher level of sulfate (and similar iron and carbon) what the steady state conditions will be.

Nancy Schuldt asked what were the plans going forward and would the agency need more data to verify the equation. Ed Swain commented that the MPCA had done statistical tests that indicate that the equation is not dependent on any given data point, and the agency did not need more data to characterize the relationship. However, the agency will be looking to get more data on how to characterize wild rice waters spatially. Shannon noted the MPCA will be requesting some funds to explore these questions at some sites, and she requested feedback on which sites should be a priority. The agency will also be exploring how to integrate data collection needs into the intensive watershed monitoring effort that is part of the Clean Water Fund.

Wild Rice Waters

Katrina then discussed the agency's draft list of approximately 1300 wild rice waters and draft definition and process for adding additional waters every 3-5 years. Katrina noted that 930 of the waters identified in the DNR's 2008 legislative report are also included in the MPCA's draft list of wild rice waters; 690 of which were initially included, and another 240 were included after confirmatory information was obtained from other sources. Katrina also noted that the agency is proposing to stop using the term "water used for production of wild rice" to describe the beneficial use and instead use the term "wild rice water," which the MPCA thinks better describes what we are trying to protect. The draft criteria for identifying a wild rice water is 8000 stems in a lake or 800 stems over one river mile. Gerald Blaha commented that

there will be additions to the list in advance of the rulemaking and that the MPCA would like Tribes to submit any additional information they might have about wild rice waters to the agency.

Darren Vogt commented that he compared the wild rice waters on the MPCA list with those within the 1854 ceded territory and the MPCA list looked great for that area. He also said he still has concerns about trying to quantify a density or acreage for wild rice waters. Margaret Watkins commented that a difficult part of quantifying rice in river reaches is that the rice moves around from year to year. This will make assessment difficult. Shannon Lotthammer noted that the MPCA would like to make use of anecdotal information and information based on oral history in identifying wild rice waters, though the agency needs to be transparent about the source of the information and it needs to be documented in some way. MPCA also commented that we have not figured out the details of impaired waters assessment and would welcome input from Tribes. MPCA would also like the Tribes to let us know if they would like waters on Tribal reservations included as part of the MPCA wild rice waters list.

Mike Connor from Bois Forte said it would be useful to have information about how sparse or extensive the wild rice is in particular waters. Nancy Schuldt commented that she was glad the MPCA was getting rid of the “water used for production” terminology. She asked if wild rice waters would be considered Class 2 waters. Katrina said at this point MPCA is proposing that wild rice waters will be in a new use class—Class 8 waters. Nancy Schuldt also said she was fundamentally opposed to using a density threshold and that this type of approach is arbitrary and fundamentally flawed because it does not account for the fact that rice can be there one year but not the next.

Ed noted that because each time a sediment sample is analyzed for organic carbon and iron, the equation can be used to calculate a protective concentration of sulfate, multiple sediment analyses will produce multiple estimates of protective sulfate concentrations for that wild rice water. Ed went on to note that a discussion is needed on how to translate the multiple sulfate concentrations into a single value.

Christine Wagener from EPA asked whether an EC10 or EC20 was used to determine the sulfide concentration used in the equation. Ed replied that it as an EC10 as recommended by the peer reviewers and also noted that paddy sites were not included. John Coleman from GLIFWIC asked what “probability of wild rice presence” in the chart in the lower left of the graphic meant exactly. Ed clarified that the full description of this is “probability of wild rice presence at a minimum of 2 stems/m².” Tyler Kaspar from 1854 Treaty Authority asked about how the proposed standard would inform regulatory decisions such as MinnTac’s discharge to Twin Lakes and proposed new mines. Katrina Kessler from MPCA answered that we have not yet looked at specific permitting decisions, we will be determining how to account for variability within stands and the details of implementation are yet to be worked out.

A brief discussion at the end of the meeting focused on issues that MPCA will be addressing in the future such as anti-degradation and TMDLs. Shannon Lotthammer said that the MPCA would be sending draft notes around for review and asked Tribes to let the MPCA know when they would like to have a formal consultation or other communications as well.

As folks were packing up to leave the meeting, after the conference call had been ended Nancy Schuldt asked if the MPCA was pursuing population modeling. Ed and Shannon noted that the agency has contracted with a postdoc from the U of MN to conduct such modeling using the data from the mesocosms. Ed is in the process of bundling up the data and getting it to the postdoc so that work can begin.